



West Coast ROM Workshop

November 19, 2015

Sandia National Laboratories

903/1021

Livermore, California

Session 1. Chair: Kevin Carlberg, SNL

9:00am–10:00am: Charbel Farhat, Stanford University. “Model reduction: a game-changing technology in the making”

10:00am–10:20am: Matthew Zahr, Stanford University. “A Nonlinear Trust-Region Framework for PDE-Constrained Optimization Using Adaptive Model Reduction”

10:20am–10:40am: Tanya Kostova, LLNL. “Error estimates of ROMs using time-derivative snapshots for dynamical systems”

Coffee Break. 10:40am–10:55am

Session 2. Chair: Jaijeet Roychowdhury, UC Berkeley

10:55am–11:30am: J Nathan Kutz, University of Washington. “Koopman Theory and Dynamic Mode Decomposition for Reduced Order Modeling”

11:30am–11:50am: Youngsoo Choi, Stanford University. “Gradient-based constrained optimization using a database of linear reduced-order models”

11:50am–12:10pm: Irina Tezaur, SNL. “A Minimal Subspace Rotation approach for stabilizing and fine-tuning projection-based reduced order models for fluid applications”

12:10pm–12:30pm: Geoffrey Oxberry, LLNL. “Parsimonious Data Acquisition for Data-driven Model Reduction”

Lunch. 12:30pm–1:20pm

Session 3. Chair: J Nathan Kutz, University of Washington

1:20pm–1:55pm: Louis Durlafsky, Stanford University. “Reduced-order models for subsurface flow and geological characterization”

1:55pm–2:15pm: Sumeet Trehan, Stanford University. “Error Estimates for Reduced-Order Models using Statistical Learning”

2:15pm–2:50pm: Michael Frenklach, UC Berkeley. “Active Subspace Identification and Utilization”

2:50pm–3:10pm: Jeffrey Fike, SNL. “Nonlinear Reduced-Order Models in an Unsteady Compressible CFD Code”

Coffee Break. 3:10pm–3:25pm

Session 4. Chair: Michael Frenklach, UC Berkeley

3:25pm–4:00pm: Jaijeet Roychowdhury, UC Berkeley. “‘Reduction’ of Continuous Systems to Boolean Finite State Machines”

4:00pm–4:20pm: Syuzanna Sargsyan, University of Washington. “Nonlinear model reduction for dynamical systems using sparse sensor locations from learned libraries”

4:20pm–4:40pm: Kyle Washabaugh, Stanford University. “Towards Scalable Model Order Reduction Methods for Aerodynamic Design Applications”

4:40pm–5:00pm: Kevin Carlberg, SNL. “Data-driven time parallelism in model reduction”

Reception. 5pm–7pm: 3 Steves Winery, 5700 Greenville Rd, Livermore, CA 94550

Organizers: David Amsallem (prev. Stanford Univ., curr. Facebook Analytics), Kevin Carlberg (SNL)

